

REMARKS

The present amendments and remarks are hereby submitted with an accompanying Petition for Revival under 37 CFR §1.137(b), and fee therefore under 37 CFR §1.17(m).

In the non-final Office Action mailed on 06/09/2006 claims 1-2 were rejected under 35 U.S.C. §103(a), as being allegedly obvious over Rao (US 6,545,842). The rejection of claims 1-2 is hereby traversed. Claim 3 has been amended to depend from claim 1 and therefore to unambiguously pertain to the elected species. Claims 4-6 depend from claim 3 and therefore, in view of the amendment to claim 3, also now unambiguously pertain to the elected species. Claims 4-6 have been amended to correct typographical errors discovered unilaterally by the applicant. Non-elected claims 7-25 have been hereby canceled without any admission of unpatentability, and applicant expressly reserves the right to pursue some or all of these canceled claims by way of one or more divisional patent applications.

As a preliminary matter, Rao does not even disclose or suggest material "inclusions," the hardness of which is of concern in the present patent application (see present patent application, page 15, lines 11-23). On the contrary, Rao discloses "dimples 172" which are concave or hollow indentations (and presumably filled with air rather than any hard particle), and Rao also discloses "shark skin denticles," which are protrusions that are apparently integral with and of common material with the bulk underlying material. See Rao, Figs 1-7. For at least this fundamental lack of teaching material "inclusions" (as recited in pending claims 1-2), Rao does not support a proper prima facie case of obviousness of claims 1 or 2. Applicants therefore request that the rejection of claims 1-2 under 35 U.S.C. §103(a) be withdrawn.

In the non-final Office Action mailed on 06/09/2006, the Examiner stated that although Rao does not disclose the specific structural limitations recited in the claims, it would have been obvious for one skilled in the art to attain the recited structure "through

routine lab experimentation and optimization ... to reduce aerodynamic drag forces...". See 06JUN06 Office Action, pages 2-3. However, it does not logically follow that the structure recited in the pending claims would be attained by an optimization based on the teachings of Rao, because an optimization based on the teachings of Rao would be focused on reducing aerodynamic drag (see Rao col. 7, lines 48-49) rather than being focused on decreasing particulate contamination (see present patent application, page 14, lines 19-22).

As the examiner admits in the above quotation from the Office Action mailed on 06/09/2006, an optimization based on the teachings of Rao would be focused on reducing aerodynamic drag. Indeed, the very same excerpt from Rao that is cited by the examiner for support, in its complete form, also indicates that an optimization based on Rao's teachings would have aerodynamics as its focus. See Rao col. 7 line 67 to col. 8 line ("Furthermore, the dimples 172 may be optimized for a particular aerodynamic environment within different disc drives. That is, both the shape and the size or radius of the dimples 172 may be optimized for different actuator arms 114 and different suspensions 116." (emphasis added)). Rao provides no motivation for one skilled in the art to undertake routine experimentation or optimization to attain a structure that reduces particulate contamination within the disk drive, and for at least this reason, Rao does not support a proper prima facie case of obviousness of claims 1 or 2. Applicants therefore request that the rejection of claims 1-2 under 35 U.S.C. §103(a) be withdrawn.

More generally, and notwithstanding the clear error in the office action's assertion that routine experimentation and/or optimization would lead to the presently claimed structure, Rao simply provides no motivation whatsoever for one skilled in the art to modify its teachings to create a magnetic head support structure having a surface with fewer than 40 inclusions having the largest dimension between 0.5 μ m and 0.2 μ m, per square millimeter, as required by all pending claims. Nor does Rao suggest how one would achieve such a structure. Indeed, improper "hindsight" based on the present application would be required to provide any such motivation to modify the Rao structure to accomplish a purpose (reducing particulate contamination) that was never

contemplated in Rao, via limiting surface inclusions in a way that was never disclosed in Rao (i.e. limiting number of surface inclusions based on their size, as required by pending independent claims 1 and 2). For at least this broader additional reason, Rao does not support a proper prima facie case of obviousness of claims 1 or 2. Applicants therefore request that the rejection of claims 1-2 under 35 U.S.C. §103(a) be withdrawn.

Moreover, Rao can be understood to teach away from the presently claimed limitation on surface inclusions because the pending claims' limitation on inclusions might frustrate Rao's purpose for Rao's "surface features 170." Specifically, Rao discloses "surface features 170" including "dimples 172" which "serve to reduce the overall drag experienced by the suspension 116" (see Rao col. 7, lines 48-49), and "shark skin denticles" 180 "that form small streamwise vortices in the airflow" (see Rao col 8, lines 54-58). Limiting, reducing, or eliminating surface features in compliance with the pending claims could frustrate these stated purposes in Rao, because, for example, if the surface features 170 were too small, few, or absent, such surface features 170 would not appreciably affect aerodynamic drag or flow. Of course there would be no motivation to modify the Rao reference in a way that might frustrate the intended operation of the invention disclosed in the Rao reference. For this additional reason, Rao does not support a proper prima facie case of obviousness of claims 1 or 2. Applicants therefore request that the rejection of claims 1-2 under 35 U.S.C. §103(a) be withdrawn.

Claim 3 is further distinguished from Rao because claim 3 additionally requires a remelted metal. There is absolutely no teaching or suggestion in Rao to use a remelted metal, and utterly no motivation is provided to modify the Rao teachings to include a remelted metal. For this additional reason, Rao can not support a proper prima facie case of obviousness of claim 3 (or the claims depending from claim 3), and applicants submit that the claims 3-6 are allowable over Rao for this additional reason.

Claim 4 is further distinguished from Rao because it additionally requires that the magnetic head support structure component comprises a swage mount. There is absolutely no teaching or suggestion in Rao to use a remelted metal in a swage mount. Indeed Rao does not specify any surface characteristics of a swage mount, remelted or

otherwise. The complete absence of this teaching in Rao is not surprising because the characteristics of a swage mount surface would have negligible effect on aerodynamics (the purpose of Rao's surface features – see, e.g., Rao col. 7, lines 2-6). In contrast, the surface of the swage mount takes on importance only with improper hindsight consideration of the disclosure of the present patent application which discloses that plastic deformation of the swage mount during swaging can exacerbate particulate contamination. See present patent application, page 10, lines 7-16. For this additional reason, Rao can not support a proper prima facie case of obviousness of claim 4 and Applicants submit that claim 4 is allowable over Rao for this additional reason.


Claim 5 is further distinguished from Rao because it additionally requires that the magnetic head support structure component comprises a magnetic head suspension spring. There is absolutely no teaching or suggestion in Rao that a remelted metal be used in a magnetic head suspension spring. Rather, a desire for material purity at the surface of a magnetic head suspension spring takes on importance only with improper hindsight consideration of the disclosure of the present patent application which discloses that plastic deformation of the "bend area" of a magnetic head suspension spring (to provide a pre-load force) can exacerbate particulate contamination. See present patent application, page 10, lines 13-21. For this additional reason, Rao can not support a proper prima facie case of obviousness of claim 5 and Applicants request that claim 5 be recognized as allowable over Rao for this additional reason.

In view of the foregoing amendments and remarks, with the accompanying Petition for Revival and associated payment of the fee therefore, Applicants respectfully submit that the pending claims are now in condition for allowance and requests reconsideration of the rejections. If it is believed that a telephone conversation would expedite the prosecution of the present application, or clarify matters with regard to its allowance, the Examiner is invited to contact the undersigned attorney at the number listed below.

The Commissioner is hereby authorized to charge payment of any required fees associated with this Communication or credit any overpayment to Deposit Account No. 50-4119.

Respectfully submitted,

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